What is claimed is:

1. (original) A method for evaluating phase signals for determining an angle or a path of a linearly or rotationally displaced component, whereby

- a number (N) of measured phase values ($\underline{\Delta}$), produced by scanning at least one phase sensor arrangement on the linearly or rotatably displaced component by means of a sensor assigned thereto are evaluated, and whereby
- the measured phase values ($\underline{\Delta}$) are transformed mathematically into a new range using a linear transformation, **wherein**
- once the measured phase values (Δ) have been transformed with a matrix ($\underline{M}_1$), a quality level (R) is determined by producing a vector ($\underline{T}$) followed by the result of a quantization operation ($\underline{V}$) regarding the vector ($\underline{T}$), **wherein**
- after a transformation has been carried out with a further matrix ($\underline{M}_4$), a further vector ($\underline{X}$) is produced from the difference ($\underline{t}$) between the vector ($\underline{T}$) and the result of the quantization operation ($\underline{V}$), **and wherein**
- the minimum value is calculated from the components (x_j) of the other vector ($\underline{X}$), and the quality level (R) is derived therefrom.

2. (original) The method as recited in Claim 1,

wherein

- the quality level (R) is determined based on the following relationship:

  $R \cdot e_{max} = \min_{j=1...nx} \left| D_j \rho x_j \; C_j \right|$,,

- whereby the quantities (C_j) and (D_j) are coefficients that are derivable from the phase signals.

3. (original) The method as recited in Claim 2,

wherein

- the application of the coefficients (C_j) and (D_j) and the transformation of the vector ($\underline{X}$) with the further matrix ($\underline{M}_4$) are combined in one method step.

4. (currently amended) A circuit arrangement for carrying out a method as recited in ~~one of the preceding Claims~~ claim 1,

wherein

- an electronic circuit is provided with a linear mapping module (M1) for processing the phase signals (Δ) with a matrix ($\underline{M}_1$), and with a quantization module (V), and **wherein**
- with a linear mapping module (M4), it is possible to produce the other vector (X) from the difference ($\underline{t}$) of the vector ($\underline{T}$) at the output of the linear mapping module (M1) and the result of the quantization operation (V) at the output of the quantization module (V), it being possible to apply the coefficients (C_j) and (D_j) to said other vector in further modules (C, D).